Plateau Region are made, viz, from 5 to 6 local mean time, morning and afternoon, give approximately the maximum and minimum values for the day; therefore, monthly means calculated from such hours approach more nearly the true mean of the month than is the case on the Atlantic seaboard and in the seventy-fifth meridian time belt.

SUNSHINE AND CLOUDINESS.

The quantity of sunshine, and therefore of heat, received by the atmosphere as a whole is very nearly constant from year to year, but the proportion received by the surface of the earth depends upon the absorption by the atmosphere, and varies largely with the distribution of cloudiness. The sunshine is now recorded automatically at 21 regular stations of the Weather Bureau by its photographic, and at 47 by its thermal effects. The photographic record sheets show the apparent solar time, but the thermometric records show seventy-fifth meridian time; for convenience the results are all given in Table IX for each hour of local mean time. In order to complete the record of the duration of cloudiness these registers are supplemented by special personal observations of the state of the sky near the sun in the hours after sunrise and before sunset, and the cloudiness for these hours has been added as a correction to the instrumental records, whence there results a complete record of the duration of sunshine from sunrise to sunset.

The average cloudiness of the whole sky is determined by numerous personal observations at all stations during the daytime, and is given in the column "average cloudiness" in Table I; its complement, or percentage of clear sky, is given in the last column of Table IX for the stations at which instrumental self-registers are maintained.

The percentage of clear sky (sunshine) for all of the stations included in Table I, obtained as described in the preceding paragraph, is graphically shown on Chart VII. The regions of cloudy and overcast skies are shown by heavy shading; an absence of shading indicates, of course, the prevalence of clear, sunshiny weather. The formation of fog and cloud is primarily due to differences of temperature in a relatively thin layer of air next to the earth's surface. The relative position of land and water surfaces often greatly increases the tendency to form areas of cloud and fog. This principle is perhaps better exemplified in the Lake Region than elsewhere, although it is of quite general application. The percentage of sunshine on the lee shores of the Lakes is always much less than on the windward shores. Next to the permanent influences that tend to form fog and cloud may be classed the frequency of the passage of cyclonic areas.

The current month.—From Chesapeake Bay southward to the Gulf and westward to the Pacific, including almost all of the territory south of the thirty-fifth parallel, sunshiny weather prevailed the greater part of the time. The southwest was especially clear and bright, there being over 70 per cent of sunshine at all stations. The regions of great cloudiness, and consequently little sunshine, were the north Pacific Coast and the Lake Region. The sunshine in both these regions was about the same as for the preceding month.

The average cloudiness by geographic districts, and the departure from the normal conditions are given in the table below. The mean values have been computed from the numerical data of Table I.

Average cloudiness and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England	6.0	+0.5	Missouri Valley	4.7	−0.7
Middle Atlantic	4.8	−0.8	Northern Slope	4.9	+0.1
South Atlantic	3.8	−1.5	Middle Slope	3.7	−0.7
Florida Peninsula	3.5	−1.1	Southern Slope	2.7	−2.1
East Gulf	3.5	−2.0	Southern Plateau	2.3	−0.7
West Gulf	4.1	−1.7	Middle Plateau	5.9	+1.1
Ohio Valley and Tennessee	6.1	−0.1	Northern Plateau	6.9	+0.2
Lower Lake	8.0	+1.2	North Pacific Coast	8.0	+1.0
Upper Lake	7.2	+0.9	Middle Pacific Coast	6.2	+1.4
North Dakota	4.7	−0.4	South Pacific Coast	4.0	−0.1
Upper Mississippi Valley	5.7	+0.4			

FOREST FIRES.

Numerous forest fires broke out in the South Atlantic States about the middle of the month. No rain had fallen for some time, and the forest and swamp lands were very dry. The fires were fanned by the high southwest winds of the 15th, and spread with great rapidity, notwithstanding the efforts of the citizens to check them. Many buildings, fences, and bridges were burned and much lumber was destroyed, the losses aggregating upward of $1,000,000. The fires devastated portions of the counties of Moore, Richmond, Cumberland, Union, Bladen, Robeson, Pender, and Sampson in North Carolina; Marlboro, Sumter, Aiken, Berkeley, Darlington, Orangeburg, Colleton, Barnwell, Marion, Chesterfield, Richland, Lexington, Fairfield, Williamsburg, Georgetown, and Florence in South Carolina.

CLIMATE AND CROP SERVICE.

By JAMES BERRY, Chief of Climate and Crop Service Division.

The following extracts relating to the general weather conditions in the several States and Territories are taken from the monthly reports of the respective sections of the Climate and Crop Service. The name of the section director is given after each summary.

Rainfall is expressed in inches.

Alabama.—The mean temperature was 46.1°, or slightly below normal; the highest was 82°, at Rock Mills on the 12th, and the lowest, 10°, at Madison on the 4th. The average precipitation was 2.10, or 3.35 below normal; the greatest monthly amount, 6.82, occurred at Alco, and the least, 0.39, at Clanton.—*F. P. Chaffee.*

Arizona.—The mean temperature was 50.4°; the highest was 90°, at Buckeye on the 6th, and the lowest, zero, at Tuba on the 3d. The average precipitation was 0.20; the greatest monthly amount, 1.50, occurred at Fort Apache, while none fell at many stations.—*W. T. Blythe.*

Arkansas.—The mean temperature was 45.8°, or 1.6° above normal; the highest was 82°, at Magnolia on the 13th, and the lowest, 7°, at Winslow on the 3d. The average precipitation was 2.08, or 1.82 below normal; the greatest monthly amount, 5.28, occurred at Pocahontas, and the least, 0.47, at Silversprings.—*F. H. Clarke.*

California.—The mean temperature was 49.4°, or 1.6° above normal; the highest was 95°, at Salton on the 26th, and the lowest, 1° below zero, at Bodie on the 9th. The average precipitation was 2.95, or 0.23 below normal; the greatest monthly amount, 22.25, occurred at Upper Mattole, while none fell at several stations.—*W. H. Hammon.*

Colorado.—The mean temperature was 30.7°, or 5.3° above normal; the highest was 77°, at Lamar and Minneapolis on the 16th, and the lowest, 23° below zero, at Rangely on the 10th. The average precipitation was 0.39, or 0.67 below normal; the greatest monthly amount, 2.54, occurred at Ruby, while none fell at several stations.—*F. H. Brandenburg.*

Florida.—The mean temperature was 57.5°, or about 3.0° below normal; the highest was 89°, at Minneota Park on the 19th, and the lowest, 20°, at De Funiak Springs on the 1st. The average precipitation was below normal; the greatest monthly amount, 5.97, occurred at Pensacola, and the least, 0.02, at Myers.—*A. J. Mitchell.*

Georgia.—The mean temperature was 46.5°, or 3.7° below normal; the highest was 83°, at Quitman on the 12th, and the lowest, 5°, at Diamond on the 4th. The average precipitation was 1.09, or 3.81 below normal; the greatest monthly amount, 2.70, occurred at Morgan, and the least, 0.34, at Washington.—*J. B. Marbury.*

Idaho.—The mean temperature was 30.7°; the highest was 69°, at Pollock on the 21st, and the lowest, 18° below zero, at Lake on the 23d.

The average precipitation was 1.51; the greatest monthly amount, 6.99, occurred at Murray, and the least, 0.02, at Lost River.—*D. P. McCallum.*

Illinois.—The mean temperature was 30.5°, or 1.8° above normal; the highest was 71°, at Cisne and Golconda on the 10th, and the lowest, 16° below zero, at Scales Mound on the 1st. The average precipitation was 2.02, or 0.19 below normal; the greatest monthly amount, 4.23, occurred at Greenville, and the least, 1.07, at New Burnside.—*C. E. Linney.*

Indiana.—The mean temperature was 32.5°, or slightly above normal; the highest was 72°, at Washington on the 5th, 10th, and 11th, and the lowest, 9° below zero, at South Bend on the 2d and 3d. The average precipitation was 1.87, or 1.47 below normal; the greatest monthly amount, 3.24, occurred at Farmland, and the least, 0.85, at Logansport.—*C. F. R. Wappenhans.*

Iowa.—The mean temperature was 24.2°, or slightly above normal; the highest was 62° at Keosauqua on the 8th, and the lowest, 18° below zero, at Iowa Falls on the 1st. The average precipitation was 1.20, or slightly below normal; the greatest monthly amount, 3.65, occurred at Cedar Rapids, and the least, 0.10, at Denison.—*G. M. Chappel.*

Kansas.—The mean temperature was 36.9°, or 5.0° above normal; the highest was 77°, at Meade on the 16th, and the lowest, 7° below zero, at Fanning on the 1st. The average precipitation was 1.21, or 0.16 above normal; the greatest monthly amount, 3.04, occurred at Wichita, while none fell at several stations.—*T. B. Jennings.*

Kentucky.—The mean temperature was 37.4°, or nearly normal; the highest was 77°, at Greensburg on the 10th, and the lowest, 3° below zero, at Caddo and Maysville on the 3d. The average precipitation was 1.60, or 2.30 below normal; the greatest monthly amount, 3.49, occurred at Caddo, and the least, 0.62, at Bardstown.—*G. E. Hunt.*

Louisiana.—The mean temperature was 54.7°, or nearly normal; the highest was 84°, at Lafayette on the 10th, 20th, and 22d, and the lowest, 18°, at Mansfield on the 3d. The average precipitation was 5.46, or 0.66 above normal; the greatest monthly amount, 12.50, occurred at the Southern University Farm (near New Orleans), and the least, 1.74, at Bastrop.—*R. E. Kerkam.*

Maryland and Delaware.—The mean temperature was 33.7°, or 1.5° above normal; the highest was 70°, at Charlotte Hall, Md., on the 12th, and at Pocomoke City, Md., on the 15th, and the lowest, 6° below zero, at Deerpark, Md., on the 2d. The average precipitation was 1.62, or 1.65 below normal; the greatest monthly amount, 3.21, occurred at Deerpark, Md., and the least, 0.70, at Boettcherville, Md.—*F. J. Walz.*

Michigan.—The mean temperature was 22.4°, or 1.3° above normal; the highest was 59°, at Ypsilanti on the 11th, and the lowest, 22° below zero, at Baldwin on the 3d. The average precipitation was 2.36, or 0.55 above normal; the greatest monthly amount, 5.77, occurred at Grand Rapids, and the least, 0.70, at Lake City.—*C. F. Schneider.*

Minnesota.—The mean temperature was 16.4°, or 3.0° above normal; the highest was 59°, at Two Harbors on the 8th, and the lowest, 42° below zero, at Tower on the 1st. The average precipitation was 1.02, or slightly above normal; the greatest monthly amount, 2.22, occurred at Caledonia, and the least, 0.29, at Ada.—*T. S. Outram.*

Mississippi.—The mean temperature was 49.3°, or 1.2° below normal; the highest was 80°, at Fayette on the 10th, and the lowest, 14°, at Booneville on the 2d, and at Ripley on the 3d. The average precipitation was 2.96, or 2.35 below normal; the greatest monthly amount, 8.00, occurred at Bay St. Louis, and the least, 0.99, at Okolona.—*R. J. Hyatt.*

Missouri.—The mean temperature was 35.5°, or 3.5° above normal; the highest was 78°, at Halfway on the 16th, and the lowest, 9° below zero, at Bethany on the 1st. The average precipitation was 1.62, or 0.54 below normal; the greatest monthly amount, 3.53, occurred at New Palestine, and the least, 0.21, at Nevada.—*A. E. Hackett.*

Montana.—The mean temperature was 30.1°, or 8.4° above normal; the highest was 63°, at Greatfalls on the 5th, and the lowest, 21° below zero, at Kipp and Poplar on the 19th. The average precipitation was 0.40, or slightly below normal; the greatest monthly amount, 1.92, occurred at Columbia Falls, and the least, trace, at Bigtimber, Fort Benton, and Wibaux.—*J. Warren Smith.*

Nebraska.—The mean temperature was 30.6°, or 8.0° above normal; the highest was 70°, at Benkelman on the 8th, and the lowest, 9° below zero, at Hay Springs and Springview on the 2d. The average precipitation was 0.43, or 0.29 below normal; the greatest monthly amount, 3.30, occurred at Nemaha, while none fell at several stations in the western portion of the State.—*G. A. Loveland.*

Nevada.—The mean temperature was 36.9°, or about 5.0° above normal; the highest was 79°, at St. Thomas on the 27th, and the lowest, 2° below zero, at McGill on the 8th, and at Toano on the 9th. The average precipitation was 0.29, or about 0.75 below normal; the greatest monthly amount, 1.75, occurred at Lewers Ranch, while none fell at several stations.—*R. F. Young.*

New England.—The mean temperature was 27.1°, or 3.8° above normal; the highest was 60°, at Lake Cochituate, Mass., on the 10th, and the lowest, 38° below zero, at Plymouth, N. H., on the 3d. The average precipitation was 5.20, or 1.65 above normal; the greatest monthly amount, 11.35, occurred at Belfast, Me., and the least, 1.87, at Nantucket, Mass.—*J. W. Smith.*

New Jersey.—The mean temperature was 32.7°, or 1.3° above normal; the highest was 65°, at Paterson on the 10th and at Franklin Furnace on the 13th, and the lowest, 15° below zero, at Rivervale on the 4th. The average precipitation was 3.48, or 0.58 below normal; the greatest monthly amount, 5.45, occurred at Paterson, and the least, 1.55, at Cape May City.—*E. W. McGann.*

New Mexico.—The mean temperature was 41.0°, or 3.9° above normal; the highest was 84°, at Hillsboro on the 26th, and the lowest, 8° below zero, at Buckmans on the 3d. The average precipitation was below normal; the greatest monthly amount, 0.90, occurred at Winsors, while none fell at several stations.—*H. B. Hersey.*

New York.—The mean temperature was 26.6°, or 2.7° above normal; the highest was 68°, at Madison Barracks on the 9th, and the lowest, 31° below zero, at Canton on the 2d and at North Lake on the 2d and 3d. The average precipitation was 2.69, or about normal; the greatest monthly amount, 7.41, occurred at Lake George, and the least, 1.03, at Fulton.—*R. M. Hardinge.*

North Carolina.—The mean temperature was 40.0°, or about 3.5° below normal; the highest was 77°, at Fayetteville on the 12th, and the lowest, 5° below zero, at Linnville on the 4th. The average precipitation was 1.03, or about 3.25 below normal; the greatest monthly amount, 3.27, occurred at Wilmington, and the least, 0.37, at Asheville.—*C. F. von Herrmann.*

North Dakota.—The mean temperature was 13.2°, or 5.5° above normal; the highest was 65°, at Jamestown on the 12th, and the lowest, 34° below zero, at Gallatin on the 18th. The average precipitation was 0.47, or 0.20 below normal; the greatest monthly amount, 1.05, occurred at Devils Lake, and the least, 0.05, at Jamestown.—*B. H. Bronson.*

Ohio.—The mean temperature was 30.0°, or very nearly normal; the highest was 72°, at Thurman on the 11th, and the lowest, 20° below zero, at Milligan on the 3d. The average precipitation was 2.32, or about 1.00 below normal; the greatest monthly amount, 4.41, occurred at Hudson, and the least, 0.85, at New Bremen.—*H. W. Richardson.*

Oklahoma.—The mean temperature was 44.3°; the highest was 82°, at Kemp and Mangum on the 25th, and the lowest, 9°, at Clifton and Tahlequah on the 3d. The average precipitation was 2.50; the greatest monthly amount, 6.34, occurred at Fort Reno, and the least, 0.43, at Tahlequah.—*J. I. Widmeyer.*

Oregon.—The mean temperature was 41.5°, or 6.5° above normal; the highest was 72°, at Prineville on the 10th, and the lowest, 6° below zero, at Lorella on the 1st. The average precipitation was 4.61, or 0.59 above normal; the greatest monthly amount, 29.39, occurred at Bay City, and the least, 0.11, at P. Ranch.—*B. S. Pague.*

Pennsylvania.—The mean temperature was 29.4°, or 1.2° above normal; the highest was 72°, at Confluence and Lycippus on the 12th, and the lowest, 16° below zero, at Dushore on the 2d. The average precipitation was 2.23, or 0.98 below normal; the greatest monthly amount, 4.05, occurred at Browers Lock, and the least, 0.96, at Wilkesbarre.—*T. F. Townsend.*

South Carolina.—The mean temperature was 44.5°, or 5.5° below normal; the highest was 78°, at Blackville and Gillisonville on the 13th, and the lowest, 10°, at Cheraw, Clemson College, and Shaws Fork on the 2d, and at Walhalla on the 1st. The average precipitation was 0.86, or 2.86 below normal; the greatest monthly amount, 2.00, occurred at Georgetown, and the least, 0.34, at St. George.—*J. W. Bauer.*

South Dakota.—The mean temperature was 24.0°, or about 9.0° above normal; the highest was 66°, at Plankinton on the 7th, and the lowest, 25° below zero, at Ipswich on the 18th. The average precipitation was 0.29, or about 0.60 below normal; the greatest monthly amount, 0.97, occurred at Silver City, while none fell at Britton, Interior, and Nowlin.—*S. W. Glenn.*

Tennessee.—The mean temperature was 40.6°, or slightly below normal; the highest was 74°, at Dover, Johnsonville, and Pope on the 10th, and the lowest, 10° below zero, at Silverlake on the 3d. The average precipitation was 1.26, or nearly 4.00 below normal; the greatest monthly amount, 2.57, occurred at Rugby, and the least, 0.47, at McMinnville.—*H. C. Bate.*

Texas.—The mean temperature for the State was 1.7° above the normal, which was determined from the departure of 36 stations distributed over the State. The departure was slight in many localities, while there was a marked excess in others. The excess along the immediate coast ranged from 1.5° to 2.5°; in some localities over east Texas it was 3.5°; over southwest Texas, 3.1°; over west Texas, 2.2°; over central and north Texas, 5.2°, and the excess for the month amounted to as much as 7° over the panhandle. The highest was 92°, at Fort Ringgold on the 19th and 28th, and the lowest, 13°, at Estelle on the 3d. The average precipitation for the State, determined by comparison with 38 stations distributed throughout the State, was 0.06 above the normal. There was a general excess over east Texas, the eastern portions of central and north Texas, the east coast district, and in a few other isolated localities, with the greatest excess, 4.33, at Brenham. Over the other portions of the State there was a deficiency, but with a few exceptions the deficit rarely amounted to more than 1.00. The greatest monthly amount, 6.65, occurred at Brenham, while none fell at several stations.—*I. M. Cline.*

Utah.—The mean temperature was 29.1°; the highest was 79°, at St. George on the 14th, and the lowest, 21° below zero, at Fort Duchesne

on the 11th. The average precipitation was 0.47; the greatest monthly amount, 1.62, occurred at Scipio, while none fell at Loa.—*J. H. Smith.*

Virginia.—The mean temperature was 34.3°, or slightly below normal; the highest was 78°, at Barboursville on the 10th, and the lowest, 9° below zero, at Guinea on the 2d. The average precipitation was 0.94, or 3.05 below normal; the greatest monthly amount, 1.85, occurred at Bigstone Gap, and the least, 0.39, at Christiansburg.—*E. A. Evans.*

Washington.—The mean temperature was 41.4°, or about 5.5° above normal; the highest was 69°, at Sunnyside on the 13th, and at Sedro on the 27th, and the lowest, 5°, at Hunters on the 19th. The average precipitation was 5.88, or about 2.00 above normal; in the western portion it was 3.50 above, and in the eastern it was somewhat below normal; the greatest monthly amount, 17.51, occurred at Tatoosh Island, and the least, 0.14, at Sunnyside.—*G. N. Salisbury.*

West Virginia.—The mean temperature was 32.7°, or slightly below normal; the highest was 74°, at Uppertract on the 12th, and the lowest, 13° below zero, at Nuttallburg on the 3d. The average precipitation was 1.84, or about 1.00 below normal; the greatest monthly amount, 3.38, occurred at Huntington, and the least, 0.64, at Uppertract.—*H. L. Ball.*

Wisconsin.—The mean temperature was 20.7°, or 2.7° above normal; the highest was 60°, at North Crandon on the 11th, and the lowest, 27° below zero, at Hayward on the 1st. The average precipitation was 1.52, or 0.36 above normal; the greatest monthly amount, 3.76, occurred at Port Washington, and the least, 0.44, at Medford.—*W. M. Wilson.*

Wyoming.—The mean temperature was 29.0°, or 5.0° above normal: the highest was 65°, at Greenriver on the 15th, and the lowest, 11° below zero, at the same station on the 9th. The average precipitation was 0.29, or 0.32 below normal; the greatest monthly amount, 1.65, occurred at Sheridan, while none fell at Fort Washakie, Greenriver, and Wamsutter.—*W. S. Palmer.*

RIVER AND FLOOD SERVICE.

By PARK MORRILL, Forecast Official, in charge of River and Flood Service.

The flood wave which occurred in the Ohio River during January passed down the lower Mississippi the past month; at the end of the month the river was decidedly lower at all points than at its beginning. The crest passed Cairo on the 1st, Memphis on the 5th, Vicksburg on the 13th, and New Orleans on the 17th. A moderate freshet occurred in the upper Ohio during the latter half of the month, but the Tennessee and Cumberland remained low, and the rise at Cairo was slight. The western tributaries all remained low.

The highest and lowest water, mean stage, and monthly range at 116 river stations are given in the accompanying table. Hydrographs for typical points on seven principal rivers are shown on Chart V. The stations selected for charting are: Keokuk, St. Louis, Cairo, Memphis, and Vicksburg, on the Mississippi; Cincinnati, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.

The following résumé of river stages and conditions of navigation in the respective streams is compiled from reports by the officials of the Weather Bureau at various river stations and section centers:

Hudson River. (Reported by A. F. Sims, Albany, N. Y.)—On the 1st of February the watershed of the Hudson had a covering of snow varying from a trace at the mouth of the river to 20 inches at its source, and the cold wave attendant upon the heavy snow which ushered in the month strengthened the weak spots in the river ice and caused accretions varying from 14 inches at Waterford to 3 inches at Newburg. All ice harvesters took advantage of the situation and pushed the harvest with much vigor. The mild conditions which followed on the 8th and 9th softened the ice and threatened to cause a suspension of the harvest. As a general rule, ice harvesting in February is precarious, and if the ice holds its own during the month it does well, for the reason that the recurring effect of the sun's heat during the day offsets the accretions due to the cold of night.

At 1 p. m. of the 11th the ice in the river began to move southward from the Greenbush bridge, and, after reaching Douws Point, became stationary and piled in the river channel. From the afternoon of the 13th to noon of the 14th the water on the crest of the State dam had risen from 12 to 24 inches; below the State dam, the water was 33 inches above the normal, having risen 19 inches in twenty-four hours. Mill owners and merchants along the river made preparations, as they were in fear of the ice going out above the State dam. On the 14th the ice in the Mohawk was gradually breaking up and there was a clear channel 50 feet wide on the south side of the gorge at Schenectady, and the islands in that district were covered with water. By the 17th the river closed at Troy for the third time this winter, and by 10 a. m. the ferryboats were compelled to cease running. The end of the month finds the ice in the Hudson breaking up at Poughkeepsie, and between Poughkeepsie and Coeymans there are 4 inches of snow on the ice, which is very much watersoaked; from Newburg to New York City the river is open; at Hudson and Catskill the ice is 6 inches thick and very poor; in front of Albany the ice is much honeycombed and a freshet of 4 feet would carry it out. The ice harvest is practically over along the Hudson; only a very limited amount is now being crabbed from behind the dykes. The crop to date is 50 per cent of the average.

Susquehanna River. (Reported by E. R. Demain, Harrisburg, Pa.)—The cold spell beginning the last week in January and continuing several days into February caused a gradual fall in the waters of the Susquehanna river system and a general closing of all streams above Sunbury, as well as the Juniata branch. This was followed by mild weather and a general breaking up of the ice from the 11th to the 13th on a flood of several feet, which reached its maximum height about the middle of the month. Another moderate cold wave on the 16th and 17th caused a second gradual fall and the closing of the streams at a few of the stations on the upper river and a general closing of the Juniata. The general storm of rain and moist snow from the 18th to the 21st was followed by a moderate freshet, which carried out nearly all the ice, except in places where it lodged along the shores and will lie until it melts unless floated out on a flood. The breaking up of the ice was attended by little or no damage to property. The last week of the month was characterized by falling waters in all streams.

The average stage of water for the month exceeded that for the corresponding period last year by about 0.6 foot, although the rainfall in the river basin was only about 61 per cent of the quantity which fell in February, 1897. This increase was due doubtless to the discharge of a larger volume of snow water than occurred last year, and is a condition very gratifying to those interests liable to damage by floods, since thaws at intervals during the winter months render the occurrence of a great flood less probable than when continued low temperatures cause a large accumulation of snow on the watershed, which, when melted by a decided warm period at the opening of spring, attended perhaps by a general and heavy rain, is likely to do serious damage to property of various kinds at many places along the river. At the close of the month but little snow remained, and this was confined principally to wooded tracks and to the north side of mountains. In February, 1897, 15 river stations gave an average stage of 3.3 feet of water and 18 stations an average rainfall of 2.41 inches, while for February, 1898, the average river gauge readings of 18 stations was 3.9 feet and the average rainfall of 17 stations 1.46 inch.

Rivers of the South Atlantic States. (Reported by E. A. Evans, Richmond, Va.; C. F. von Herrman, Raleigh, N. C.; L. N. Jesunofsky, Charleston, S. C.; D. Fisher, Augusta, Ga.; and J. B. Marbury, Atlanta, Ga.)—Although an unusually light February precipitation obtained over the basin of the James River, it did not have an appreciable effect upon the stage of water. This was probably due to the slow melting of the snow which was deposited over the headwaters of the stream on January 30. During the first decade the gauge readings were slightly above zero, but with a falling tendency. On the 15th the lowest stage for the month, —0.1, was reached and maintained until the 21st, when under the influence of moderate amounts of precipitation it again went a little above zero, and remained so until the close of the month. The cold weather of the 1st to 5th caused considerable ice in the upper river, and fairly heavy ice above the falls and near Nine Mile Lock. Some of this broke and moved down on the 8th, entering the rapids and being crushed before reaching navigable water so that no damage was done by it. The shore ice remained stationary and gradually melted. There was sufficient water for milling purposes, and navigation was free throughout the month.

The Roanoke and Cape Fear rivers both maintained uniform stages throughout the month of February, and the fluctuations in the smaller streams were very slight. In fact the river conditions were quite devoid of noteworthy features, except that the continuation of the drought in North Carolina has kept all streams quite low, and much below the average for this month. The rainfall was small, occurring chiefly from the 18th to the 22d, and the State deficiency is about 3 inches. Many wells which had dried up last fall have not yet received a sufficient supply of water. The minimum stage in the Cape Fear, about 2 feet on the gauge at Fayetteville, occurred February 15, after which there was a slight rise. There was barely sufficient water to permit transportation between Wilmington and Fayetteville. River business above tidewater is about suspended on other streams.